

REMARKS/ARGUMENTS

Claims 26-53 are active in this case.

Claim 46 is amended to clarify that the copolymer is with N-vinylcaprolactams and therefore it is requested that the rejection under 35 USC 112, first paragraph be withdrawn.

Claim 48 is amended to clarify the temperature range and therefore it is requested that the rejection under 35 USC 112, second paragraph be withdrawn.

No new matter is added by the amendments.

The rejection under 35 USC 103 in view of Torgerson is untenable because, very simply, Torgerson does not describe or suggest the polymer defined in the claims as either:

(a) a block polymer comprising water-soluble blocks alternating with LCST blocks;

OR

(b) a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

The Examiner's purported rationale that one could have picked from any number of monomers in Torgerson and specifically, the "A" monomer that can be acrylic acid (col. 8, line 17) and a "B" monomer that can be a vinylcaprolactam (col. 10, line 25) is not tenable. The Examiner has failed to recognize that Torgerson does not describe a block polymer as claimed nor provides any direction to the graft polymer which is also an option as claimed.

The selection of the claimed polymers is to achieve the problem of obtaining a copolymer for controlling the rheology of aqueous solutions as a function of temperature, while at the same time maintaining a certain level of transparency for the compositions (see page 4, lines 17 to 22 and page 5, lines 20 to 23 of the specification).

The problem to be solved by the claimed polymer is not, as stated in the Office Action simply "to form a polymer that is used in cosmetic formulations." The technical problem

solved by the claimed invention is not mentioned in Torgerson and there is nothing in Torgerson that would allow the man skilled in the art to select among the many cited monomers to yield polymers imparting properties such as rheology and transparency to cosmetic compositions.

Torgerson is concerned with selecting monomers based on different polymer properties, i.e., flexibility, elasticity, solubility, glass transition temperatures (T_g), molecular weights, and strength, which are properties useful for hair styling compositions (see col. 1, line 64 to col. 2, line 3; and col. 4, lines 54-55).

It would appear that the problem-solution analysis of the prior art and the present invention has been discounted in the Office Action (see page 4, last paragraph). However, the recognition of a problem and a solution to that problem not taught in the prior art is a fundamental aspect in determining whether the claimed invention as a whole would have been obvious (see 2141.02 III).

Unlike the rationale stated in the Office Action, Torgerson is concerned with preparing and utilizing graft copolymers:

The present invention relates to a water or alcohol soluble or dispersible thermoplastic elastomeric copolymer having a **backbone and two or more polymeric pendant side chains . . .** (col. 2, lines 37-39, emphasis added).

The copolymers of the present invention, can also be referred to as "graft copolymers" because they can be prepared from the copolymerization of monomer units and macromonomer units. *In other words, the macromonomer is "grafted" or incorporated into the copolymer.* (col. 4, lines 59-63, emphasis added).

Further, Torgerson describes the graft copolymers as:

characterized in having an elastomeric or flexible backbone and rigid, thermoplastic, hydrophilic side chains. (col. 4, lines 55-56)

The first option in Claim 26, which is defined as **a block copolymer** with alternating units of water-soluble and LCST blocks, is clearly different than these **grafted polymers** described by Torgerson and, in fact, teach away from selecting polymers that are block copolymers as claimed (see MPEP § 2141.02). Furthermore, in col. 3, lines 1-47, Torgerson describes that the copolymer is formed by copolymerization of A and B units always has a backbone (main chain) substantially formed of A and E units copolymerized together in a random distribution through the backbone but not in blocks. The B units are side, pendant chains on the A/E backbone (see col. 3, line 20).

Therefore, even if one could simply pick and choose the appropriate monomers, the monomers would not be arranged as a block copolymer as set forth in the claims following the description in Torgerson.

As to water-soluble backbone with LCST grafts, this polymer is certainly not described in Torgerson because the copolymers Torgerson teaches are simply not the same.

Torgerson describes that the water-soluble monomers that impart the polymer with water-solubility, see again col. 4, lines 55-56 of Torgerson: “an elastomeric or flexible **backbone** and rigid, thermoplastic, **hydrophilic side chains**.” (emphasis added). Thus, unlike the claimed copolymers which have a water-soluble backbone with LCST grafts, the Torgerson copolymers have hydrophilic (or water-soluble) side chains. The difference is clear.

Moreover, at col. 5, line 48-62 Torgerson describes:

The copolymers of the present invention are formed from the copolymerization of randomly repeating A and B units . . . In typical embodiments of these copolymers, **the backbone is primarily derived from the ethylenically unsaturated portion of the A monomer unit and the ethylenically unsaturated portion of the B macromonomer unit. The side chains are derived from the non-copolymerized portions of the macromonomer.**

Here again, there is no description for a water-soluble backbone with LCST grafts.

In responding to the previous arguments pertaining to the anticipation rejection (which has been withdrawn), states that “It will be obvious to select from the group of A and B to form a polymer that is used for cosmetic formulation.” (page 7 of the Office Action). This, however, misses the point. The main point of distinction is that even if one could have selected the various monomers that coincide with those in the claims, they would not be arranged in the manner as claimed because Torgerson’s teachings are directed to other types of polymers. Restated differently, assuming that one could choose monomers A and B similar to those as claimed Torgerson’s disclosure teach away from the copolymers as claimed for the reasons discussed in detail above (see MPEP 2141.02 IV: “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.”)

In view of the above reasons alone, Applicants request that the rejection based on Torgerson be withdrawn.

Nonetheless, there are still further reasons why Torgerson fails to render the claimed invention obvious.

First, Torgerson describes vinyl caprolactams as a potential “A” monomer (col. 8, line 54) and also as a potential “B” monomer (col. 10, line 25) but those listings are buried amongst dozens of possible monomers. Torgerson, however, certainly provides no disclosure for specifically selecting N-vinylcaprolactam as the LCST unit in a polymer alternating with the water-soluble units; or as a graft on a water-soluble backbone as claimed.

Second, Torgerson describes that the “A” monomer can be present in an amount of 40-90% with a preferred range of 60-80% (see col. 7, lines 21-24) and the “B” monomer

from 10 to 60% with a preferred range of 20 to 40% (see col. 9, lines 16-19). However, Torgerson provides no indication whatsoever to select a polymer with the above criteria AND also include N-vinylcaprolactam as the LCST units in an amount from 5 to 70% by weight in the polymer.

So amongst the broad and generic disclosure provided in Torgerson, one must first select a combination of water-soluble units and LCST units, then they must select a N-vinylcaprolactam as an LCST unit, then they must select an amount of LCST units to be within 5 to 70%, then they must choose one arrangement from (a) a block polymer comprising water-soluble blocks alternating with LCST blocks; OR (b) a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

Putting together the various possible options provided in Torgerson would result in thousands of possible combinations and even when using the present claims as a guide, which clearly the Office has done here, none of these combinations are the claimed block copolymer with alternating units of water-soluble and LCST blocks. Moreover, there is nothing in Torgerson which would lead one to a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts, which is also an option in the claims.

In view of the above, Applicants request that the rejection under 35 USC 103 be withdrawn.

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Applicants also request that this application be passed to allowance without further delay.

Respectfully submitted,

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